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EnSLP

TOMATO FRUITWORM

no. 13



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(a, Female moth (or adult) with wings spread; b, male moth with wings in natural position; c, eggs; d, larva; e, pupa (or transformation stage) in its cell in the soil; f, larva feeding on tomato fruit, showing typical injury. (a, b, and f about two-thirds natural size; c about 7 times natural size; e about $1\frac{1}{3}$ times natural size.)

(See other side for life history and control)

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BUREAU OF
ENTOMOLOGY & PLANT QUARANTINE

★ TOMATO FRUITWORM

(*Heliothis armigera* (Hbn.))

Life History

The tomato fruitworm, or corn earworm, occurs over the entire United States, being destructive to several crops besides tomatoes, cotton, and corn. Annually it is a serious pest of tomatoes in the Southern States and in California. Periodically it occurs in sufficient numbers in other sections to cause considerable damage. In the extreme South the moths may emerge as early as January from the pupal cells which were formed in the ground by the larvae, or "worms," the preceding fall. The majority, however, appear later in the spring. Shortly after emergence the female moth begins to lay her eggs. These eggs are somewhat smaller than the head of a common pin and are laid singly on the leaves of the plant. The larvae that hatch from these eggs crawl for a short time over the leaves of the plant, feeding sparingly, and eventually find their way to the fruits, into which they cut holes or burrow, usually at the stem end. One worm may feed within a single tomato until full-grown, or it may move from one tomato to another, injuring several before it enters one to complete its growth. The full-grown worms leave the fruit, enter the soil, and transform into the pupal or resting stage. There may be two or more broods a season.

Control

The most satisfactory remedy so far developed for the control of this pest is to apply to the tomato foliage either a cryolite or a calcium arsenate dust or a mixture of corn meal and cryolite. The commercial undiluted cryolites contain from 80 to 95 percent of sodium fluoaluminate, and these should be diluted with talc so that the dust which is applied to the crop will contain approximately 70 percent of the sodium fluoaluminate. The corn meal mixture is prepared by mixing 1 pound of cryolite with 10 pounds of corn meal. The calcium arsenate is used undiluted.

The most satisfactory control will be obtained by making three applications of either the cryolite or calcium arsenate dust. The first application should be made when the plants average from 1 to 2 feet across. The second and third applications should follow at intervals of 10 to 15 days. On tomato fields with an average of 1,000 plants per acre the dust should be applied at the following rate per acre: 10 pounds for the first, 20 pounds for the second, and 30 pounds for the last application. The dust should be so applied that it will cover all the foliage, especially the growing tips and outer leaves of the plant. The corn meal bait should be used at the following rate per acre: 40 pounds for the first, 60 pounds for the second, and 80 pounds for the third application.

Caution: Cryolite and calcium arsenate are poisons, and their use as insecticides on the tomato crop may leave an undesirable residue on the fruit, which should be removed by either washing or wiping before the fruit is marketed or eaten.